

What is claimed is:

1 1. A method of modifying conductive wiring,
2 comprising:

3 providing a semiconductor substrate;

4 forming a first barrier on the semiconductor
5 substrate;

6 forming a conductive wiring on the first barrier;

7 forming a second barrier on the conductive wiring;

8 and

9 performing a thermal treatment on the semiconductor
10 substrate.

1 2. The method as claimed in claim 1, wherein the
2 first barrier and the second barrier individually
3 comprises a stacked Ti/TiN.

1 3. The method as claimed in claim 1, wherein the
2 conductive wiring comprises a Cu/Al alloy or a Cu/Al/Si
3 alloy.

1 4. The method as claimed in claim 1, wherein the
2 thermal treatment is performed by baking.

1 5. The method as claimed in claim 1, wherein the
2 thermal treatment is performed by quenching.

1 6. The method as claimed in claim 1, wherein the
2 thermal treatment is performed after forming the
3 conductive wiring.

1 7. The method as claimed in claim 2, wherein the
2 thermal treatment is performed after forming TiN of the
3 second barrier.

1 8. The method as claimed in claim 1, wherein the
2 thermal treatment is performed in an atmosphere
3 containing nitrogen.

1 9. The method as claimed in claim 1, wherein the
2 thermal treatment and a plasma treatment are performed
3 simultaneously.

1 10. The method as claimed in claim 1, wherein the
2 thermal treatment is performed at a temperature of about
3 200~400°C.

1 11. The method as claimed in claim 5, wherein the
2 substrate is quenched from a high temperature range of
3 about 350°C to a low temperature range of about 23°C in a
4 short interval between about 50 to 70 seconds.

1 12. A method of modifying conductive wiring,
2 comprising:

3 providing a semiconductor substrate;

4 forming a first barrier on the semiconductor;

5 forming a conductive wiring on the first barrier;

6 forming a second barrier on the conductive wiring;

7 and

8 treating the semiconductor substrate with a

9 nitrogen-containing gas.

1 13. The method as claimed in claim 12, wherein the
2 first barrier and the second barrier individually
3 comprise a stacked Ti/TiN.

1 14. The method as claimed in claim 12, wherein the
2 conductive wiring comprises a Cu/Al alloy or a Cu/Al/Si
3 alloy.

1 15. The method as claimed in claim 12, wherein the
2 nitrogen-containing gas is treated with the semiconductor
3 before forming the conductive wiring.

1 16. The method as claimed in claim 12, wherein the
2 nitrogen-containing gas is treated with the semiconductor
3 after forming the conductive wiring.

1 17. The method as claimed in claim 12, wherein the
2 nitrogen-containing gas is treated with the semiconductor
3 after forming Ti of the second barrier.

1 18. The method as claimed in claim 12, wherein the
2 nitrogen-containing gas comprises N₂O or N₂.

1 19. The method as claimed in claim 12, wherein the
2 nitrogen-containing gas and a thermal treatment are
3 treated simultaneously.

1 20. The method as claimed in claim 12, wherein the
2 nitrogen-containing gas and a plasma treatment are
3 treated simultaneously.